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said holding unit having a window, through which at least a portion of the top layer of said article is viewable by said optical measuring unit.

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The apparatus of Claim 1, wherein said working area contains a working medium and said holding unit contains a connecting medium having properties similar to those of said working medium.

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The apparatus of Claim 2, wherein said processing unit is a polisher.

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The apparatus of Claim 3, wherein said optical measurement unit comprises a spectrophotometer.

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the apparatus of Claim 4, wherein said optical measurement station measures a thickness of at least a top layer of said article.

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The apparatus of Claim 3, wherein said article is a semiconductor wafer.

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The apparatus of Claim 5, wherein said optical measurement unit comprises an imager for imaging said article in order to carry out said thickness measurements of said top layer on pre-determined features of the article's pattern.

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A method for processing the surface of a semiconductor article, having at least one layer thereon comprising the steps of:

applying processing to said surface of said semiconductor article in a working area of a processing unit, wherein said step of processing is performed in a working medium;

conveying said article from said working zone into a measuring area of an optical measurement station located outside said working zone and adjacent to said processing unit, wherein said measuring area is separated from said optical assembly of said optical measurement station by a substantially transparent window;

holding said article in a fixed position; and

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measuring a desired parameter of at least one layer of said article surface through said transparent window.

9. ~~125~~ The method of Claim 8, wherein said measuring area contains a uniform connecting medium transposed between said measuring area and said window.

10. ~~246~~ The method of Claim 9, wherein said uniform connecting medium has properties similar to those of said working medium.

11. ~~127~~ The method of Claim 10, wherein said step of processing is chemical mechanical polishing and wherein said processing unit is a polisher.

12. ~~128~~ The method of Claim 11, wherein said uniform connecting medium is water.

13. ~~129~~ The method of Claim 9, wherein said desired parameter is thickness of said at least one layer.

14. ~~130~~ The method of Claim 9, wherein said step of measuring comprises making a spectrophotometric measurement.

15. ~~131~~ The method of Claim 14, wherein said article comprises a semiconductor wafer.

REMARKS

Entry of the Amendment, prior to the examination of the instant patent application is respectfully requested.

The above-requested amendments to the specification and drawings correspond to those made in the Parent Application. The amendments to the specification are made to correct obvious typographical, grammatical and spelling errors, and to ensure uniformity of the text with the drawings. The drawing amendments are requested to correct items which were numbered incorrectly and to conform the drawings to the specification. None of the above amendments enter new matter.

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